

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

REMARKS

This application has been reviewed in light of the Final Office Action dated January 7, 2009. Claims 1-17 are pending in the application. Although applicants believe that the claims are allowable in their current form, claims 1, 9 and 13 have been amended by the present amendment in order to further prosecution and more distinctly point out an inventive aspect of the present invention. No new matter has been added. The Examiner's reconsideration of the rejection in view of the amendment and the following remarks is respectfully requested.

Claims 1-12

Claims 1-12 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Haddock (U.S. Patent No. 6,678,248) in view of Metin (U.S. Patent Publication 2002/0031142) and Golden (U.S. Patent No. 6,563,793). Applicants respectfully assert that amended claims 1 and 9, at the very least, are patentable and non-obvious over the combination of Haddock, Metin and Golden.

Claims 1 and 9 have been amended to recite, *inter alia*, "wherein the plurality of output queues comprise a plurality of additional output queues for reserved connections, wherein each additional output queue is established and associated only with reserved connection data packets for one reserved connection path at a given time." Haddock, Metin and Golden, taken alone or in combination, fail to teach or suggest at least this element of amended claims 1 and 9.

Haddock teaches a policy based mechanism for managing and prioritizing traffic within a network. Haddock accomplishes prioritization by using a plurality of QoS queues and traffic group classifications (see e.g., FIG. 1B). In the Examiner's Response to Arguments, the Examiner asserts that Haddock teaches a one-to-one mapping of traffic groups to output queues.

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

However, amended claims 1 and 9 recite that there are “a plurality of additional output queues for reserved connections,” e.g., a many-to-one mapping of RSVP traffic to queues. While Haddock does discuss consolidating the mappings so as to map more than one traffic group to a queue (a one-to-many mapping), Haddock does not remotely suggest expanding the mappings so as to have more than one queue for any given traffic group. Thus, it is quite clear that Haddock does not teach the plurality of queues for reserved connections claimed in claims 1 and 9.

Furthermore, as the Examiner acknowledges, Haddock does not disclose an output queue for reserved connections. As a result, Haddock cannot be said to teach a plurality of queues wherein each queue is established and associated *only with reserved connection data packets for one reserved connection path at a given time*.

Metin does not cure the deficiencies of Haddock. While Metin discloses a switch with a high-priority queue and a low priority queue, Metin specifically teaches that the high-priority queue is used for servicing frames associated with different high priority connection packets hosts in different VLANs (e.g., VLAN 1 and VLAN 2). As pointed out in the applicants previous response, FIGs. 4-7 of Metin explicitly show that packets to be transmitted from Host A to C in VLAN 1 and packets to be transmitted from Host B to Host C in VLAN 2 are stored in the same output buffer (queue) at a given time. This directly contradicts the element in amended claims 1 and 9 which states that “each additional output queue is established and associated only with reserved connection data packets for one reserved connection path at a given time.” In other words, in the example above, one of the plurality of queues set aside for reserved connections is used only for the packets in reserved connection VLAN1 and a second, different one of the plurality of queues is set aside for reserved connections for only the packets in

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

reserved connection VLAN2. Therefore, while Metin teaches one output queue for all reserved connections, the present claims disclose one output queue per reserved connection.

As a result, the present invention can ensure equal treatment of all reserved connections, for example by transmitting one packet from each reserved connection queue in rotation. Metin, however, by sharing an output queue for all reserved connections, cannot ensure such equal treatment. For example, Metin would allow one reserved connection to flood the queue with numerous packets at once, causing the other reserved connections to suffer delays while the packets from the one connection are transmitted from the queue. In effect, this gives one reserved connection a temporary super-priority over the others. By associating one output queue per reserved connection, the present invention can ensure that some reserved connections do not suffer at the expense of others. Thus, the present invention guarantees equal priority among all reserved connections, while Metin does not.

The Examiner suggests that limiting the logical groups in Metin to two reserved connection hosts suggests the present claims. However, the above example, in which VLAN 1 and VLAN 2 are both logical groups with only two hosts, clearly demonstrates that this is not the case. Moreover, claims 1 and 9 as amended claim a plurality of queues, each of which involved in a single reserved connection between two hosts. Therefore, limiting Metin to only two reserved connection hosts does not teach or suggest the present invention because the present invention, through its plurality of queues, allows for reserved connections for more than two hosts at a time. Thus, Metin certainly fails to disclose or suggest "a plurality of additional output queues for reserved connections, wherein each additional output queue is established and associated only with reserved connection data packets for one reserved connection path at a given time," as recited in claims 1 and 9.

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

Golden fails to cure the deficiencies of Haddock and Metin. In the Examiner's Response to Arguments, the Examiner asserts that Golden teaches reserving resources along a path wherein the resources include switches with ports and queues. While this may be true, Golden, like Haddock and Metin, does not teach or suggest that the switches in the network "comprise a plurality of additional output queues for reserved connections, wherein each additional output queue is established and associated only with reserved connection data packets for one reserved connection path at a given time," as claimed in amended claims 1 and 9.

The Examiner contends that col. 9, line 14 – col. 10, line 45 of Golden explicitly teaches that an output queue is established for one reserved connection path at a time. The applicants respectfully disagree. The cited portion of Golden simply describes Golden's process of setting up a reserved connection. At no point during this description does Golden ever mention or refer to output queues at all, let alone explicitly teach that one output queue in a switch is established and associated with only one reserved connection at a time. Moreover, Golden states that "it should be apparent that the invention is operative whether or not such switches maintain more than one port queue per switch port" (col. 11, lines 63-65). The implication of this statement is that switches with multiple queues operate in a very similar manner to switches with a single queue. As such, it is clear that Golden does not teach that an output queue is set aside and associated only with one reserved connection at a time. If Golden did teach this, it would not be apparent to one skilled in the art that Golden is operative on a switch with one queue because it would not be clear how to handle the reserved connection packets when they must share the same queue as all other traffic.

The Examiner also contends that col. 11, lines 57-60 discloses maintaining separate queues for reserved connection data. The applicants respectfully disagree. The cited portion of

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

Golden states that the switch “can forward reserved connection packets to high priority queues.”

First, this statement teaches that reserved packets are sent to “high priority queues,” not to queues specifically set aside for “reserved connections”. It is well known in the art that priority traffic is a different concept than a reserved connection. At best, it may be argued that reserved connections are one kind of priority traffic. However, since the present invention specifically teaches the additional queues to reserved connections only, Golden’s teaching of high priority queues does not teach or suggest the present invention as they clearly include traffic outside of this recitation.

In addition, the cited portion of Golden does not teach or suggest that each of the reserved connection output queues is “established and associated only with reserved connection data packets for one reserved connection path.” Golden, like Metin, makes a general statement that reserved connection packets can be forwarded to high priority queues. Thus, in Golden, any reserved connection packet can be forwarded to any high priority queue, meaning that each high priority queue may contain packets from more than one reserved connection at a time. Claims 1 and 9, however, specifically recite that *each reserved connection queue only contains packets for one reserved connection path at a given time*. Therefore, it is clear that Golden does not teach or suggest amended claims 1 and 9 and does not cure the deficiencies of Haddock and Metin.

For at least the above reasons, claims 1 and 9 are believed to be patentable over Haddock, Metin and Golden, taken alone or in combination. Therefore, applicants respectfully assert that claims 1 and 9 as amended are in a condition for allowance. In addition, claims 2-8 and 10-12 are believed to be patentable over the cited art at least by virtue of their dependency from claims 1 and 9. Reconsideration of the rejection is respectfully requested.

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

Claims 13-17

Claims 13-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Metin in view of Golden.

In the Examiner's Response to Arguments, the Examiner asserts that Golden teaches a switch that maintains separate queues for forwarding reserved connection traffic. Although the applicants disagree, in order to further prosecution claim 13 has been amended to recite "allocating, for a given time, one of a plurality of output queues set aside for reserved connections within said first network switch device for buffering only those reserved connection data packets to be transmitted on the reserved connection path for that particular reserved connection."

Applicants believe that claim 13 is distinct and patentable over Metin and Golden, taken alone or in combination, for at least the reasons discussed above with reference to claims 1 and 9. Further, claims 14-17 are believed to be patentable over Metin and Golden, at the very least, by virtue of their dependence from claim 13. Reconsideration of the rejection is respectfully requested.

In view of the foregoing remarks, it is respectfully submitted that all claims now pending in the application are in condition for allowance. Early and favorable reconsideration of the case is respectfully requested.

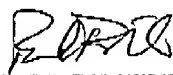
Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's Deposit Account.

Respectfully submitted,

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